

Avaya Solution & Interoperability Test Lab

Application Notes for Avaya Communication Server 1000E R6.0 with Frox Communications Atiras R7.0 – Issue 1.0

Abstract

These Application Notes describe how to configure Avaya Communication Server 1000E (software release 6.0) to interwork with Frox Communications Atiras R7.0 as a system management platform. Atiras network management system is a modular software package with which everyday telephone tasks can be automated and system data can be extracted to allow optimization of system functions.

Information in these Application Notes has been obtained through DevConnect Compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. General Test Approach and Test Results

These Application Notes describe the test configuration for Frox Communications Atiras R7.0 with an Avaya Communication Server 1000E R6.0. Atiras is a client/server based all-in-one service application platform running on Microsoft Windows operating systems. Atiras provides effective Communication Server 1000E configuration management, i.e., telephone configuration, route management, network management, call costs retrieval and report generation. A PC based attendant position (with a web client for directory lookup) is included as well as traffic analysis and fault data reporting. The Atiras server software is installed on a dedicated server platform; client software can be installed in multiple desktops. A web based client is also available (Internet Explorer and Firefox are supported). Atiras can manage multiple systems in a single network, or multiple systems on multiple networks. Atiras provides significant benefits to end users with large numbers of deployed installations who require a sophisticated multi system management tool.

2. General Test Approach and Test Results

The general test approach was to configure a simulated enterprise voice network using a Communication Server 1000E Network Routing Server (NRS) and two Communication Server 1000E systems, each connected to the NRS via SIP trunks. All SIP traffic was routed by the NRS. See **Figure 1** for a network diagram.

Atiras uses multiple interfaces to connect to an Avaya Communication Server 1000E system. The Atiras server requires a LAN connection which routes to the Communication Server 1000E T-LAN. This is used to collect system data, access maintenance overlays and perform user data updates. A Lantronix terminal server is used to allow the Communication Server 1000E serial port data to be retrieved remotely via an Ethernet connection. This is necessary to retrieve call detail recording data and traffic reports. The terminal server connects to the T-LAN and to the Communication Server 1000E #2 com port 1; Atiras is then configured to access Communication Server 1000E via the terminal server for specific applications.

Atiras contains a software based Attendant answering position; which interfaces to the Communication Server 1000E by controlling an Avaya 2250 Attendant Console. This allows remote display of the Avaya 2250 functions. The connection between the Avaya 2250 and Atiras is RS232; a USB to Serial converter is used as often serial ports are not available on modern servers.

A variety of Avaya telephones were installed and configured on each Communication Server 1000E. The NRS was configured to route calls between the two Communication Server 1000E's. The Atiras client was installed on the same server as the Atiras Server, but can be installed on a separate machine if required.

2.1. Interoperability Compliance Testing

The compatibility tests included the following:

- Retrieve and synchronize all telephone data from Communication Server 1000E
- Perform basic telephone management (add new phones, change existing phones, move a phone to a different line card)
- Perform enhanced phone settings management (add system speed call lists, change PLDN's, delete TSP's, run batch jobs)
- Retrieve Corporate Directory information from the Communication Server 1000E
- Retrieve Call Detail Recording data from the Communication Server 1000E
- Charge calls to accounts and verify the charges are recorded
- Monitor system messages over the serial port to detect alarms
- Answer incoming calls on the Attendant answering position
- Perform Communication Server 1000E access security tests
- UNP Network handling
- NRS handling

2.2. Test Results

The following observation was made during Atiras R7.0 testing.

Not Possible to upload Corporate Directory files to Communication Server 1000E using Atiras R7.0

Atiras R7.0 attempts to send Corporate Directory files to the Communication Server 1000E, but is unable to do this as it is not able to access the correct folder on Communication Server 1000E. A workaround is to manually upload the files using secure FTP.

2.3. Support

For technical support on Frox Communications products, please use the following web link. http://www.frox.com/en/10052/Contact.html

3. Reference Configuration

The following Figure 1 shows the network configuration used for all test cases in the test plan.



Figure 1: Test Configuration for Avaya Communication Server 1000E and Frox Communications Atiras R7.0

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Avaya Equipment	Software / Firmware Version
Avaya Communication Server 1000E	Avaya Communication Server 1000E 06.00R /
	6.00.20.00
	(PSWV 100 with latest Patches and Deplist)
Avaya Communication Server 1000E	CSP Version: MGCC AO01
Media Gateway	MSP Version: MGCM AB01
	APP Version: MGCA AA07
	FPGA Version: MGCF AA15
	BOOT Version: MGCB AL60
	DSP1 Version: DSP1 AB01
	DSP2 Version: DSP2 AB01
Avaya 1100 series IP Telephones	
• 1140e	0625C7M (UniStim 4.2)
• 1120e	0624C7M (UniStim 4.2)
Avaya M3900 series Telephones	
• M3904	Version: AA93
Avaya Attendant console	
• 2250	
Frox Communications Equipment	Software / Firmware Version
Frox Communications Atiras Server	Atiras R7.0Ma P01
Lantronix Terminal Server EDS2100	V5.2.0.0_R20

5. Configure Avaya Communication Server 1000E NRS

This section describes the steps required to configure Communication Server 1000E Network Routing Service (NRS) prior to testing with Atiras R7.0. The general installation and configuration of Communication Server 1000E NRS and UCM is presumed to have been previously completed and is not discussed here. The function of the NRS is to route SIP traffic between two or more Communication Server 1000E systems, NRS configuration requires the following actions:

- Log on to Avaya Unified Communications Management and Network Routing Services Manager and configure System Wide Settings
- Administer SIP, L1 and L0 domains
- Administer SIP Endpoints
- Administer Routing Entries

For detailed information on installing and configuring Communication Server 1000E NRS, see item [2] in Section 10 of this document.

5.1. Unified Communications Management (UCM), Network Routing Services Manager (NRSM) and System Wide Settings

Access UCM using a Web Browser by entering http://<FQDN >/, where <FQDN> is the fully qualified domain name of the UCM server. Log in using appropriate credentials (not shown) and the Home page will be presented with menu options shown below. Scroll down and select NRSM on cores2 from the Elements list.

NØRTEL	UNIFIED COMMUNICATION	NS MANAGEMENT	2		<u>Help</u>	<u>Loqout</u>
Network Elements CS 1000 Services Corporate Directory IPSec Numbering Groups Patches SNMP Profiles Secure FTP Token	Host Name: dpp-ucm.galctlab.com Software	Version: 02.10.0029.01(3780)	Jser Name admin			
	Elements New elements are registered into the security fra list by entering a search term. Search	amework, or may be added as simp Reset	ole hyperlinks. Click an elem	ient name to launch its management service. You can	optionally fi	ilter the
Subscriber Manager	Add Edit Delete					1 0
 User Services Administrative Users 	Element Name	Element Type •	Release	Address	Der	scription 📩
External Authentication Password	5 cores1.galctlab.com (member)	Linux Base	7.0	47.166.92.206	Bas	se OS ment.
- Security Roles	6 dpp-ucm.galctlab.com (primary)	Linux Base	7.0	47.166.92.202	Bas	se OS ment.
Policies Certificates Active Sessions Tools Logs Data	7 cores2.galctlab.com (member)	Linux Base	6.0	47.166.92.197	Bas	se OS ment.
	8 172.18.20.16	Media Gateway Controller	6.0	172.18.20.16	Nev	w ment.
	9 🔲 172.18.20.17	Media Gateway Controller	6.0	172.18.20.17	Nev	w ment.
	10 172.18.20.3	Media Gateway Controller	6.0	172.18.20.3	Nev	w ment.
	11 172.18.20.15	Media Gateway Controller	7.0	172.18.20.15	Nev	w ment.
	12 NRSM on sps	Network Routing Service	7.0	172.18.20.13	Nev	w ment.
	13 NRSM on cores2	Network Routing Service	6.0	172.18.20.12	Nev	N

The Network Routing Service Manager (NRSM) page will open in a new window (see following screenshot). Click on the **Edit** button (not shown), the **Edit Server Configuration** window opens. The following settings are required to be configured:

- Hostname, this is the primary NRS network name
- Primary TLAN IP address, the primary NRS IP address
- Secondary TLAN IP address, IP address of a secondary NRS (if required)
- Secondary server host name, secondary NRS network name
- UDP Transport enabled, checkbox must be ticked
- Primary server UDP IP, same as Primary TLAN IP address
- Primary server UDP port, must be set to 5060
- Secondary server UDP IP, same as Secondary TLAN IP address (if required)
- Secondary server UDP port, must be set to 5060 (if required)
- TCP Transport enabled, checkbox must be ticked
- **Primary server TCP IP**, same as Primary TLAN IP address
- **Primary server TCP port**, must be set to 5060
- Secondary server TCP IP, same as Secondary TLAN IP address (if required)
- Secondary server TCP port, must be set to 5060 (if required)
- TLS Transport enabled, checkbox must be ticked
- Primary server TLS IP, same as Primary TLAN IP address
- Primary server TLS port, must be set to 5061
- Secondary server TLS IP, same as Secondary TLAN IP address (if required)
- Secondary server TLS port, must be set to 5061 (if required)

When finished, click on the **Save** button.



Select **System Wide Settings** from the side menu, the **System Wide Settings** page will appear (see the following screenshot). Configure the following values:

- Sip registration time to live timer, set to 3600 seconds
- H.323 gatekeeper time to live timer, set to 30 seconds
- H.323 alias name, set to dppsps in this example
- Auto backup time, the NRS automatic backup script runs at this time

Click on the **Save** button when finished.

NØRTEL	NETWORK ROU	TING SERVICE MANAGER	<u>Help</u> <u>Loqout</u>
«UCM Network Services - System NRS Server Database System Wide Settings - Numbering Plans	Managing: 172.18.2 System : System Wide Set	o.12 • System Wide Settings tings	
Numbering Plans Domains Endpoints Routes Network Post-Translation Collaborative Servers Tools SIP Phone Context - Routing Tests H.323 SIP Backup Restore GK/NRS Data upgrade	r2	H.323 gatekeeper registration time to live time; 1000 (30-3600 Seconds) H.323 gatekeeper registration time to live time; 2000 (30-3600 Seconds) H.323 alias name; 2009 **********************************	
	* Required value.		Save Cancel

5.2. Administer SIP Service Domain, L1 and L0 domains

Ensure the **Managing Standby database** radio button is checked. Click on **Domains** from the left hand side menu, the **Edit Service Domain** page appears. Enter the required **Domain name** and an (optional) **Domain description**. Click on the **Save** button when finished.

NØRTEL	NETWORK ROUTING SER	WORK ROUTING SERVICE MANAGER						
«UCM Network Services - System NRS Server Database	Managing: O Active database (a) Standby database	172.18.20.12 Numbering Plans.» Domains.» Service Domains.						
System Wide Settings	Edit Service Domain							
Domains Endpoints Routes		Domain name: dpp.nortel * Domain description:						
Network Post-Translation Collaborative Servers								
SIP Phone Context	* Required value.		Save Cancel					

The Service Domain page now reappears with three tabs. Ensuring the **Managing Standby database** radio button is checked, click on the L1 tab (not shown) and select the service domain previously configured from the **Filter by Domain** drop down box (not shown). Enter the **Domain name** (**UDP** in the example) in the **Edit L1 Domain** page (see the following screenshot). Ensure **Endpoint authentication enabled** is set to **authentication off**. The remaining parameters can be set to values appropriate for the installation. Click on the **Save** button when completed.

NØRTEL	NETWORK ROUTING SERVICE MANAGER	<u>Help</u> <u>Logout</u>
«UCM Network Services – System NRS Server Database System Wide Settings – Numbering Plans	Managing: Active database 172.18.20.12 Standby database <u>Numbering Plans, » L1 Domain.</u> Edit L1 Domain (dpp.nortel)	
Endpoints Routes Network Post-Translation Collaborative Servers	Domain name: udp * Domain description:	
- Tools SIP Phone Context - Routing Tests H.323 SIP Backup Restore GK/NRS Data upgrade	Endpoint authentication enabled: Authentication off Authentication password: E.164 country code: E.164 area	
	E.164 international dialing access code: E.164 international dialing code length: E.164 national dialing access code: E.164 national dialing code length: E.164 national dialing code length: (0.99)	
	E.164 local (subscriber) dialing access code: E.164 local (subscriber) dialing code length: Private L1 domain (UDP location) dialing access code:	
	* Required value	e Cancel

Ensure the **Managing Standby database** radio button is checked. Click on the **L0** tab (not shown), the **Edit L0 Domain** page appears. Select the configured service domain from the **Filter by Domain** drop down box (not shown) and then the previously configured L1 domain from the **Filter by L1 Domain** drop down box (not shown). Enter the **Domain name** (**CDP** in the example shown); ensure **Endpoint authentication enabled** is set to **Not configured** (see following screenshot). The remaining parameters can be set to values appropriate for the installation. Click on the **Save** button when completed.

NØRTEL NE	TWORK ROUTH	ING SERVICE MANAGER	<u>Help</u> <u>Loqout</u>
«UCM Network Services - System NRS Server Database System Wide Settings - Numbering Plans	Managing: Active d Standby Edit L0 Domain (dp	database 172.18.20.12 y database <u>Numbering Plans, » Domains, » LO Domain</u>	
Domains Endpoints		Domain name: cdp *	
Routes Network Post-Translation Collaborative Servers		Domain description:	
- Tools		Endpoint authentication enabled: Not configured	
SIP Phone Context - Routing Tests		Authentication password:	
H.323	Ν	E.164 country code:	i i i i i i i i i i i i i i i i i i i
SIP Backup	45	E.164 area code:	
Restore		Private unqualified number label: PrivateUnknown	
GK/NKS Data upgrade		E.164 international dialing access code:	
		E.164 international dialing code length: (0-99)	
		E.164 national dialing access code:	
		E.164 national dialing code length: (0-99)	
		E.164 local (subscriber) dialing access code:	
		E.164 local (subscriber) dialing code length: (0-99)	
	* Required value.		Save Cancel

This completes the NRS Domain configuration. The next screenshot is an example of the fully configured SIP Service Domain, L1 and L0 domains.

NØRTEL	NETWORK F	ROUTING S	ERVICE MANAGEF	2		Help	<u>Loqout</u>
«UCM Network Services - System NRS Server Database	Managing:	 Active database Standby database 	172.18.20.12 Numbering Plans	Domains			
System Wide Settings		lich the basic structu	re of your converged network, define	d by Senice domains, I.1 (UDP) an	d L0 (CDP) domains		
Domains	Domains estab	instrute basic structur	e oryour converged network, denne	d by Service domains, ET (ODF) an	d Ed (ODT) domains.		
Endpoints Routes	Service	Domains (1)	L1 Domains (UDP) (1)	L0 Domains (CDP) (1)			
Network Post-Translation Collaborative Servers	Filter by Domai	n : All service doma	iins 💙 / All L1 domains 💌				
- Tools	Add	Delete					Refresh
- Routing Tests		ID -	Description	# of Gateway Endpoints	# of Routing Entries	Context	
H.323	1 🗖 <u>cdp</u>			<u>6</u>	<u>71</u>	dpp.nortel / udp	

5.3. Administer SIP Endpoints

SIP endpoints must register with the NRS before sending or receiving SIP traffic. Endpoints are typically Communication Server 1000E systems, but may also be SIP telephones or third party SIP proxies. Ensure the **Managing Standby database** radio button is checked. Click on the **Endpoint** entry in the left hand side menu and in the resulting page select the previously configured SIP, L1 and L0 domains from the **Limit results to Domain** suite of drop down lists (not shown). The following screenshot shows the previously entered SIP, L1 and L0 domains highlighted.

N@RTEL	NETWORK ROUTING SERVICE MANAGER	<u>Help</u> <u>Loqout</u>
«UCM Network Services - System NRS Server Database	Managing: O Active database 172.18.20.12 Image: Standby database Numbering Plans > Endpoints	
System Wide Settings - Numbering Plans Domains	Search for Endpoints	Hide
Endpoints Routes	Enter an endpoint ID (use * for all) and click Search. You may narrow the search by specifying a particular domain.	
Network Post-Translation Collaborative Servers	Endpoint ID: *	
SIP Phone Context	Limit results to Domain: dpp.nortel V / udp V / cdp	
- Routing Tests H.323	Results per pag	je: 50 💌 Search
SIP Backup Restore	Gateway Endpoints (6) User Endpoints (0)	
GK/NRS Data upgrade	Add Delete SIP phone context	Refresh

When drop down lists have been populated with the correct values, the **Add** button is then activated and a new endpoint can be added. Click on the **Add** button and enter the endpoint data. See the highlighted area in the following screenshot for information.

- End point name (cores2 in this example) must match that configured later in Section 6.4
- **Description** is typically some text to describe the endpoint
- Trust Node must be checked
- Tandem gateway endpoint name is set to Not Applicable
- Endpoint Authentication enabled is set to Authentication off
- SIP Support must be set to Dynamic SIP endpoint
- SIP Mode must be set to Proxy
- SIP TCP transport enabled checkbox must be ticked
- **SIP TCP port** must be **5060**

The remaining values will be specific to the particular location and endpoint being configured, examples of typical values are shown, and the correct values must be entered before the endpoint is brought into service. Click on the **Save** button to confirm the settings.



5.4. Administer Routing Entries

Routing entries are telephone numbers associated with an endpoint. When a telephone number is dialed, the NRS searches the endpoint database to find a match and then directs the call to the endpoint with the first returned match. Endpoints can be entered as a range of telephone numbers (e.g., 756*, which matches all numbers beginning with 756) or as a list of unique numbers. Unique listings reduce unnecessary SIP messaging, but require significantly more effort to setup and maintain. Atiras manages system data associated with telephone numbers by automatically populating the NRS database when a telephone is added to a Communication Server 1000E and removing the data when a telephone is deleted. The following screenshot shows the routing entries initially setup on the Communication Server 1000E.

NGRTEL NE	TWORK ROUTING SERV	ICE MANAGER			<u>Help Loqout</u>
«UCM Network Services System NRS Server Database System Wide Settings Omains Endpoints Routes Network Post-Translation Collaborative Servers Tools SIP Phone Context Routing Tests H 323 SIP Backup Restore GKINRS Data upgrade	Managing: O Active database Standby database Search for Routing Entries	172.18.20.12 <u>Numbering Plans</u> » Routes			Hide
	Enter a DnPrefix and Dn Type (use * for all) DN Prefix: * Dt Limit results to Domain: All service doma Endpoint Name: All gatew	and click Search.You may narrow th N Type: All DN Types ins v / All L1 domains v / ay endpoints v	e search by specifying a particular d	romain. Results per page: 50 🗸	Search
	Routing Entries (71) C Add. Copy Move. Impo DN Prefix Copy Viove. Impo 0 2500 Private level 0 re code) code) Private level 0 re code) 7 2501 code) Private level 0 re code)	Default Routes (0) It. Export. Routing test. DN Type gional (CDP steering gional (CDP steering	Delete Route Cost SIP URI Ph cdp.udp cdp.udp	one Context Context dpp.nortel / udp / cdp / cores2 dpp.nortel / udp / cdp / cores2	Refresh
	a 2600 Private level 0 re code) 1 - 50 of 71 Routing Entry(les) 2000 2000	gional (CDP steering 1	cdp.udp Page 1 of 2	dpp.nortel / udp / cdp / cores2 First Pre	vious <u>Next</u> <u>Last</u>

To add a new routing entry, ensure the **Managing Standby database** radio button is checked. Click on the **Routes** entry in the left hand side menu and in the resulting page select the previously configured **SIP**, **L1 and L0** domains from the **Limit results to Domain** suite of drop down lists. When drop down lists have been populated with the correct values, the **Add** button is activated (not shown) and a new route can be added. Click on the **Add** button and enter the route data:

- Select Private level 0 regional (CDP steering code) from the DN type drop down list
- **DN prefix** is a four digit telephone number.
- Route cost is set to 1.

Click on the **Save** button when finished. The following screenshot shows an example routing entry.

NØRTEL	NETWORK ROUTING SERVICE MANAGER	<u>Help</u> <u>Loqout</u>
«UCM Network Services - System NRS Server Database	Managing: O Active database 172.18.20.12 Standby database Numbering Plans > Routes > Routing Entry Father (when no posted / when / open no posted / when	
System Wide Settings - Numbering Plans Domains Endpoints Routes Network Post-Translation Collaborative Servers - Tools SIB Phone Context	DN type: Private level 0 regional (CDP steering code) V DN prefic 2500 * Route cost 1 * (1-255)	
 Routing Tests H.323 	* Required value.	Save Cancel

This completes the Communication Server 1000E NRS setup. To add more endpoints, repeat **Sections 5.3** and **5.4**.

6. Configure the Avaya Communication Server 1000E

This section describes the steps required to configure Communication Server 1000E SIP trunks and the necessary configuration for terminals (digital, analog, attendant and IP phones). SIP trunks are established between Communication Server 1000E and the NRS and are used for all off switch calls. To reach telephone numbers on other Communication Server 1000E systems, calls are placed via the NRS, which proxies SIP messages. The general installation of the Avaya Communication Server 1000E, NRS and UCM is presumed to have been previously completed and is not discussed further here.

6.1. Confirm System Features

The keycode installed on the Call Server controls the maximum values for system attributes. If a required feature is not enabled or there is insufficient capacity, contact an authorized Avaya sales representative to add additional capacity. Use the Communication Server 1000E system terminal and manually load **overlay 22** to print the **System Limits** (the required command is SLT), and verify there are sufficient **Traditional Telephones**, **IP Users**, **Basic IP Users** and **SIP Access Ports** to meet requirements.

	Overlay 22 – system Limits (SLT) Printout						
System type is - Commu CPPM - Pentium M 1.4 G	nication S Hz	ervei	r 1000E,	CPPM Lin	nux		
IPMGs Registered:		1					
IPMGs Unregistered:		0					
IPMGs Configured/unreg	istered:	0					
TRADITIONAL TELEPHONES	32767	LEFT	32764	USED	3		
DECT USERS	32767	LEFT	32767	USED	0		
IP USERS	32767	LEFT	32744	USED	23		
BASIC IP USERS	32767	LEFT	32761	USED	5		
TEMPORARY IP USERS	32767	LEFT	32767	USED	0		
DECT VISITOR USER	10000	LEFT	10000	USED	0		
ACD AGENTS	32767	LEFT	32752	USED	15		
MOBILE EXTENSIONS	32767	LEFT	32767	USED	0		
TELEPHONY SERVICES	32767	LEFT	32767	USED	0		
CONVERGED MOBILE USERS	32767	LEFT	32767	USED	0		
NORTEL SIP LINES	32767	LEFT	32765	USED	2		
THIRD PARTY SIP LINES	32767	LEFT	32761	USED	6		
SIP CONVERGED DESKTOPS	32767	LEFT	32767	USED	0		
SIP CTI TR87	32767	LEFT	32767	USED	0		
SIP ACCESS PORTS	32767	LEFT	32752	USED	15		

Load overlay 21, and confirm the customer is setup to use ISDN trunks (see below).

```
Overlay 21 Customer Network Data
```

```
REQ: prt
TYPE: net
TYPE NET_DATA
CUST 0
TYPE NET_DATA
CUST 00
OPT RTD
AC1 INTL NPA SPN NXX LOC
AC2
FNP YES
ISDN YES
```

6.2. Configure System Node Information

Use Communication Server 1000E Element Manager to configure the system node properties. Navigate to the **System** \rightarrow **IP Networks** \rightarrow **IP Telephony Nodes** \rightarrow **Node Details** and click on the **Add** button (not shown), the node details page appears (see following screenshot). Fill in the following settings:

- Node ID, a unique numerical value to identify the node
- Call Server IP Address, IP address of the Communication Server 1000E call processor
- Telephony LAN (TLAN) Node IP Address, a unique IP address for the node
- Telephony LAN (TLAN) Subnet Mask, the TLAN network Subnet Mask
- Embedded LAN (ELAN) Gateway IP Address, the node ELAN gateway IP address
- Embedded LAN (ELAN) Subnet Mask, the ELAN network Subnet Mask

Click on the Save button when finished.

NØRTEL	CS 1000	DELEMENT M	ANAGER						
- UCM Network Services - Home - Links	Managing: 172.18.20.12 Username: admin System » IP Network » I <u>P Telephony Nodes</u> » Node Details Node Details (ID: 1 - SIP Line, LTPS, PD, Gateway (SIPGw, H323Gw)								
Virtual Terminals System + Alarms - Maintenance + Core Equipment - Peripheral Equipment - Peripheral Equipment - IP Network - <u>Nodes: Servers, Media Cards</u> - Maintenance and Reports - Media Gateways - Zones - Host and Route Tables - Network Address Translation (N - QoS Thresholds - Personal Directories - Unicode Name Directory	Node ID: Call Server IP Addres Telephony LAN (TLAI Node IP Address: Subnet Mask: IP Telephony Node • <u>Voice Gatew</u> • <u>Quality of Se</u> * Required Value.	1 s: 172.18.20.12 47.166.92.209 255.255.255.224 e PropertiesApplicati vay (VGW) and Code ervice (QoS)	* (0-9999) * Embedded LAN (* Gateway IP addre * Subnet Mask: ons (click to edit configurat	ELAN) ss: 172.18.20.1 255.255.255.128 ion) SIP Line Terminal Provy Sen/c	ar (TDS)	Cancel			
- Engineered Values + Emergency Services + Software - Customers	Associated Signa	aling Servers & Car Id Remove Make Leade	ds J		Print Re	efresh			
- Routes and Trunks - Routes and Trunks - D-Channels	Hostname ▲ Cores2	<u>Type</u> Signaling Server	Deployed Applications SIP Line, LTPS, Gateway, PD	ELAN IP TL 172.18.20.12 47.	AN IP 166.92.197	Role Leader			

6.3. Configure System Codecs

Communication Server 1000E uses codecs to convert digital and analog telephone speech into a format suitable for SIP trunks. Before SIP trunks can be utilised, system codecs must be selected. Using the Communication Server 1000E element manager sidebar, click on Nodes: Servers, Media Cards and navigate to the IP Network \rightarrow IP Telephony Nodes \rightarrow Node Details \rightarrow VGW and Codecs property page and configure the Communication Server 1000E General codec settings as in the next screenshot. The values highlighted are required for correct operation.

NØRTEL	CS 1000 ELEMENT MANAGER
- UCM Network Services - Home - Links - Virtual Terminals	Managing: 172.18.20.12 Username: admin System » IP Network » I <u>P Telephony Nodes</u> » <u>Node Details</u> » VGW and Codecs Node ID: 1 - Voice Gateway (VGW) and Codecs
 Virtual Terminals System Alarms Maintenance Core Equipment Peripheral Equipment IP Network Nodes: Servers. Media Cards Media Gateways Zones Host and Route Tables Network Address Translation (Ni-QoS Thresholds Personal Directories Unicode Name Directory Interfaces Engineered Values Emergency Services Software Customers Routes and Trunks D-Channels Digital Trunk Interface 	General Voice Codecs General Echo Cancellation: Use canceller, with tail delay: 128 v Dynamic attenuation Voice Activity Detection Threshold: 17 (-20 - +10 DBM) Idle Noise Level: -65 (-327 - +327 DBM) Signaling Options: DTMF Tone Detection Low latency mode ØRemove DTMF delay (squelch DTMF from TDM to IP) ØModem/Fax pass-through ØV 21 Fax Tone Detection
	Voice Codecs Codec G711: Enabled (required) Voice payload size: 20 (milliseconds per frame) Voice Playout (jitter buffer) delay: 40 (milliseconds) Nominal Maximum Maximum delay may be automatically adjusted based on Nominal settings.

Scroll down to the bottom of the page and click on the Save button (not shown).

6.4. Virtual Trunk Gateway Configuration

The next screenshot shows the SIP Virtual Trunk Gateway configuration. To successfully setup Virtual trunks, the Virtual Trunk Gateway (i.e., the application that registers with the NRS to route call traffic) settings must be configured correctly. The majority of settings on this page will match those previously used when setting up the NRS properties because the gateway needs to be in the same SIP domain as the NRS and use known aliases and ports. Navigate to **System** \rightarrow **IP Network** \rightarrow **IP Telephony Nodes** \rightarrow **Node Details** \rightarrow **Virtual Trunk Gateway Configuration** and fill in the highlighted areas with the following settings.

- Vtrk Gateway Application, select SIPGw and H.323Gw application
- SIP Domain name, must be same value as configured in Section 5.2
- Local SIP Port, must be set to 5060 as in Section 5.2
- Gateway endpoint name, must be endpoint name in Section 5.3
- H.323 ID, must be as in Section 5.3

NØRTEL	CS 1000 ELEMENT M	MANAGER	
- UCM Network Services - Home - Links - Virtual Terminals - System + Alarms	Managing: 172.18.20.12 Username: admin System » IP Network » IP Telephony Node Node ID: 1 - Virtual Trunk Gateway General SIP Gateway Settings Vtrk Gateway Application: Fable gateway	s » <u>Node Details</u> » Virtual Trunk Gateway Conf Configuration Details <u>SIP Gateway Services</u> y service on this Node	iguration
 Maintenance Core Equipment Peripheral Equipment IP Network Nodes: Servers, Media Cards Maintenance and Reports Media Gateways Zones Host and Route Tables Network Address Translation (N/ QoS Thresholds Personal Directories Unicode Name Directory Interfaces Engineered Values Emergency Services Software Coustomers Routes and Trunks 	General Vtrk Gateway Application: SIPGw and H.32 SIP Domain name: dpp.nortel Local SIP Port: 5060 Gateway endpoint name: cores2 Gateway password:	Virtual Trunk Netv	vork Health Monitor sses (listed below) aptured for the IP addresses listed below. Add Remove
– D-Channels – Digital Trunk Interface	Dort-E061 (4 SECURITY Disabled Y		

Scroll down the page and enter the **Proxy or Redirect Server** (i.e., the NRS) settings. In the following screenshot:

- Primary TLAN IP Address, set to the value used in Section 5.1
- Secondary TLAN IP Address, set to the value used in Section 5.1
- **Port** setting should match the setting in **Section 5.1**
- Transport protocol was set to TCP
- Options Support registration checkbox must be ticked

These settings configure the Virtual Trunk Gateway to allow successful registration with the NRS.

NØRTEL	CS 1000 ELEMENT MA	NAGER		
UCM Network Services Home Links Virtual Terminals System Alarms Maintenance Core Equipment Peripheral Equipment IP Network Nodes: Servers. Media Cards Maintenance and Reports Media Gateways Zones Host and Route Tables Network Address Translation (N- QoS Thresholds Personal Directories Unicode Name Directory Interfaces Engineered Values	Managing: 172.18.20.12 Username: admin System » IP Network » IP Telephony Nodes » No Node ID: 1 - Virtual Trunk Gateway Con General SIP Gateway Settings Port: 5061 (1 - 65535) Number of Byte Re-negotiation: 0 Options: Client Authentication X509 certificate authority Proxy Or Redirect Server: Primary TLAN IP Address: 47.166.92.198 Port: 5060 (1 - 65535) Transport protocol: TCP Options: Support registration Primary CDS Proxy	ode Details » Virtual Trunk Gateway Co nfiguration Details I SIP Gateway Services Secondary TL/ Address: Port: 5060 Transport protoco Options: Suppo Secon	AN IP 47.166.92.197 (1 - 65535) (1 - 65535) (1 - registration dary CDS Proxy	
Emergency Services Software Customers Routes and Trunks - Routes and Trunks - D-Channels Diaital Trunk Interface	CLID Presentation: Country code (CCC): Area code: Number Translation: Strip: Prefix: CLID Display Fit	North America		*

Scroll down the page to the H.323 Gatekeeper Settings. Use the following settings:

- Primary gatekeeper (TLAN) IP Address, same as used in Section 5.1
- Alternate gatekeeper (TLAN) IP Address, same as used in Section 5.1
- Primary Network Connect Server (TLAN) IP Address, same as Section 5.1
- Alternate Network Connect Server (TLAN) IP Address, same as Section 5.1
- Primary Network Connect Server Port number is set to 16500
- Alternate Network Connect Server Port number is also 16500
- **Primary Network Connect Server timeout** is set to **10** seconds

Click on the **Save** button when finished.

NØRTEL	CS 1000 ELEMENT MANAGER			
- UCM Network Services - Home - Links	Managing: 172.18.20.12 Username: admin System » IP Network » <u>IP Telephony Nodes</u> » <u>Node Details</u> » Vi Node ID: 1 - Virtual Trunk Gateway Configuratio	tual Trunk Gateway Con 1 Details	figuration	
- Virtual Terminals - System	General SIP Gateway Settings SIP Gatew Aud Remove	ay Services	<u>H.323 Gateway Settings</u>	~
- Maintenance - Maintenance - Core Equipment - Peripheral Equipment - IP Network - <u>Nodes: Servers. Media Cards</u> - Maintenance and Reports - Media Gateways - Zones - Host and Route Tables - Network Address Translation (N).	Auto Number Use Auto Number Use		Insert Number	
- QoS Thresholds - Personal Directories	H.323 Gateway Settings			
- Unicode Name Directory	Primary gatekeeper (TLAN) IP Address:	47.166.92.198		
+ Interfaces - Engineered Values	Alternate gatekeeper (TLAN) IP Address:	47.166.92.197		
+ Emergency Services	Primary Network Connect Server (TLAN) IP Addres	s: 47.166.92.198		
+ Software	Primary Network Connect Server Port number:	16500	(1 - 65535)	
- Customers	Alternate Network Connect Server (TLAN) IP Addre	ss: 47.166.92.197		
- Routes and Trunks	Alternate Network Connect Server Port number:	16500	(1 - 65535)	N
– D-Channels – Digital Trunk Interface	Primary Network Connect Server timeout:	10	(1 - 30)	~
 Dialing and Numbering Plans Electronic Switched Network 	* Required Value. Note: Changes made on this page	e will NOT be transmitted	d until the Node is also saved. Save	Cancel

6.5. Configure Bandwidth Zones

Bandwidth Zones are used for alternate call routing between IP telephones and for call Bandwidth Management. SIP trunks require a unique zone, and best practice dictates that IP Trunks, IP telephones and Media Gateways are placed in separate zones. Use Element Manager to define bandwidth zones as in the following highlighted example. Select **Zones** from the side menu and navigate to **Zones** \rightarrow **Bandwidth Zones** and add new zones as required. The following screenshot shows an example Virtual Trunk zone configuration.

- **Zone Number** must be a unique non zero value.
- Intrazone Bandwidth is usually set to the network speed (10, 100 or 1000 M/bS)
- Intrazone Strategy sets the preferred codec quality for in zone calls
- Interzone Bandwidth is usually set to the network speed (10, 100 or 1000 M/bS)
- Interzone Strategy sets the preferred codec quality for zone to zone calls
- **Resource Type** can be set to **Shared**
- Zone Intent defines the function; in this case it is used for VTRK (Virtual Trunks)

Click on the Submit button when completed.



6.6. Configure SIP Trunks

Communication Server 1000E virtual trunks will be used for all inbound and outbound calls. Four separate steps are required to configure Communication Server 1000E virtual trunks:-

- Configure a **D-Channel Handler (DCH)**; configure using the Communication Server 1000E system terminal and **overlay 17**.
- Configure a SIP trunk Route Data Block (RDB); configure using the Communication Server 1000E system terminal and overlay 16.
- Configure **SIP trunk** members; configure using the Communication Server 1000E system terminal and **overlay 14**.
- Configure a **Route List Block (RLB)**; configure using the Communication Server 1000E system terminal and **overlay 86**.

The following is an example DCH configuration for SIP trunks. Load overlay 17 at the Communication Server 1000E system terminal and enter the following values. The highlighted entries are required for correct SIP trunk operation. Exit overlay 17 when completed.

		Overlay 17 D-Channel Handler Configuration
ADAN	DCH 50	
СТҮР	DCIP	
DES	VIR_TRK	
USR	ISLD	
ISLM	4000	
SSRC	1800	
OTBF	32	
NASA	YES	
IFC	SL1	
CNEG	1	
RLS	ID 5	
RCAP	ND2	
MBGA	NO	
Н323		
OV	LR NO	
OV	LS NO	

Next, configure the SIP trunk Route Data Block (RDB) using the Communication Server 1000E system terminal and overlay 16. Load **overlay 16**, enter **RDB** at the prompt, press return and commence configuration. The value for **DCH** is the same as previously entered in **overlay 17**. The value for **NODE** should match the node value in **Section 6.2**. The value for **ZONE** should match that used in **Section 6.5**. The remaining highlighted values are important for correct SIP trunk operation.

Overlay 16 RDB		
TYPE: rdbCUST 00	ACOD 130	CPDC NO
ROUT 100	TCPP NO	DLTN NO
TYPE RDB	PII NO	HOLD 02 02 40
CUST 00	AUXP NO	SEIZ 02 02
ROUT 100	TARG	SVFL 02 02
DES VIR TRK	CLEN 1	DRNG NO
	BILN NO	CDR NO
NPID TBL NUM ()	OABS	NATL YES
ESN NO	INST	SSL
RPA NO	IDC NO	CFWR NO
CNVT NO	DCNO 10	IDOP NO
SAT NO	NDNO 10 *	VRAT NO
RCLS FYT	DEXT NO	MUS YES
VTPK VES	DNAM NO	MRT 21
	SIGO STD	PANS YES
	STYP SDAT	RACD NO
	MEC NO	MANO NO
CRID NO	TCTS YES	FRI. 0.0
NUDE 1	OCIS YES	FRI. 1 0
DTRK NO	TIMP ICE 1920	FRI. 2 0
ISDN YES	OCE 1920	FRI. 3 0
MODE ISLD	EOD 12052	FRI 1 0
DCH 50	LOD 13932	
IFC SL1		FRE 5 0
PNI 00001	DSI 34944	FRE 0 0
NCNA YES	NKD IUIIZ	FRL 7 U
NCRD YES		OHQ NO
TRO NO	ODT 4096	CRO NO
FALT NO	RGV 640	CBÓ NO
CTYP UKWN	GTO 896	AUTH NO
INAC NO	GTI 896	TTBL U
ISAR NO	SFB 3	ATAN NO
DAPC NO	PRPS 800	OHTD NO
MBXR NO	NBS 2048	PLEV 2
MBXOT NPA	NBL 4096	OPR NO
MBXT 0	IENB 5	ALRM NO
PTYP ATT	TFD 0	ART 0
CNDP UKWN	VSS 0	PECL NO
AUTO NO	VGD 6	DCTI 0
DNIS NO	EESD 1024	TIDY 1600 100
DCDR NO	SST 5 0	ATRR NO
ICOG IAO	DTD NO	TRRL NO
SRCH LIN	SCDT NO	SGRP 0
TRMB YES	2 DT NO	ARDN NO
STEP	NEDC ORG	CTBL 0
	FEDC ORG	AACR NO

Next, configure virtual trunk members using the Communication Server 1000E system terminal and **overlay 14**. Configure sufficient trunk members to carry expected incoming and outgoing call levels. The following example shows a single SIP trunk member configuration. Load overlay 14 at the system terminal and type **new X**, where X is the required number of trunks. Continue entering data until the overlay exits. The **RTMB** value is a combination of the **ROUT** value entered in the previous step and the first trunk member (usually 1). The remaining highlighted values are important for correct SIP trunk operation.

								0v	erlay	14 T	runk	Member	Confi	guration
TN	-	L60	0	0	0 D7	ATE	PAGE	DES	VIF	R_TRK				
TN	-	L60	0	00	00	VI	RTUAI	<u> </u>						
TYP	ΡΕΙ	PTI												
CDH	EN 8	3D												
CUS	ST ()												
XTR	RK V	TRK												
ZON	IE 0	0253	3											
TIT	MP (500												
BIN	MP (500												
AUT	ΓΟ_Η	BIME	P N	10										
NMU	JS 1	10												
TRE	K I	ANLO	3											
NCO	DS ()												
RT₽	1B 1	00 :	1											
CHI	ID 1	L												
ΤGA	AR 1	L												
STR	RI/S	TRO	WN	IK I	NK									
SUI	PN 1	ζES												
AST	r 1	10												
IAI	PG ()												
CLS	S I	「LD	DI	'N (CND	ECD	WTA	LPR	APN	THFD	XREE	P SPCD	MSBT	
	I	210	NI	C										
TK	ID													
AA	R I	JO												

Configure a **Route List Block (RLB)** in **overlay 86**. Load overlay 86 at the system terminal and type **new**. The following example shows the values used. The value for **ROUT** is the same as previously entered in overlay 16. The **RLI** value is unique to each RLB.

Overlav 86 RLB	FCI 0
CUST OFEAT rlb RLI 24	FSNI O
ELC NO	BNE NO
ENTR 0	DORG NO
LTER NO	SBOC NRR
ROUT 100	PROU 1
TOD 0 ON 1 ON 2 ON 3 ON	IDBB DBD
4 ON 5 ON 6 ON 7 ON	IOHQ NO
VNS NO	OHQ NO
SCNV NO	CBQ NO
CNV NO	
EXP NO	ISET 0
FRI, 0	NALT 5
DMT 0	MFRL 0
CTBL 0	OVLL 0
ISDM 0	

Next, configure Special Prefix Number(s) (SPN) which users will dial to reach PSTN numbers. Use the Communication Server 1000E system terminal and overlay 90. The following are some example SPN entries used. The highlighted **RLI** value previously configured in overlay 86 is used as the Route List Index (RLI); this is the default route to the NRS.

SPN 999	SPN 90	SPN 2	SPN 15
FLEN 3	FLEN 7	FLEN 7	FLEN 3
ITOH NO	ITOH NO	ITOH NO	ITOH NO
CLTP NONE	CLTP NONE	CLTP NONE	CLTP NONE
RLI 24	RLI 24	RLI 24	RLI 24
SDRR NONE	SDRR NONE	SDRR NONE	SDRR NONE
ITEI NONE	ITEI NONE	ITEI NONE	ITEI NONE

6.7. Configure Analog, Digital, Attendant and IP Telephones

A variety of telephone types were used during the testing, the following is the configuration for the Avaya 1140e Unistim IP telephone. Load **overlay 20** at the system terminal and enter the following values. A unique four digit number is entered for the **KEY 00** and **KEY 01** value.

```
Overlay 20 IP Telephone configuration
DES 1140
TN 096 0 01 16 VIRTUAL
TYPE 1140
CDEN 8D
CTYP XDLC
CUST 0
NUID
NHTN
CFG ZONE 2
CUR ZONE 2
ERL 0
ECL
    0
FDN 0
TGAR 0
LDN NO
NCOS 0
SGRP 0
RNPG 1
SCI 0
SSU
LNRS 16
XLST
SCPW
SFLT NO
CAC MFC 0
CLS UNR FBA WTA LPR PUA MTD FNA HTA TDD HFA CRPD
    MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
     POD SLKD CCSD SWD LNA CNDA
     CFTD SFD MRD DDV CNID CDCA MSID DAPA BFED RCBD
     ICDA CDMD LLCN MCTD CLBD AUTR
     GPUD DPUD DNDA CFXA ARHD FITD CLTD ASCD
     CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD
     UDI RCC HBTA AHD IPND DDGA NAMA MIND PRSD NRWD NRCD NROD
     DRDD EXRO
     USMD USRD ULAD CCBD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNO3 MCBN
     FDSD NOVD VOLA VOUD CDMR PRED RECA MCDD T87D SBMD KEM3 MSNV FRA PKCH MUTA MWTD
---continued on next page----
```

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```
---continued from previous page----
DVLD CROD CROD
CPND_LANG ENG
RCO 0
hunt 0
LHK 0
PLEV 02
PUID
DANI NO
AST 00
IAPG 1
AACS NO
ITNA NO
DGRP
MLWU LANG 0
MLNG ENG
DNDR 0
KEY 00 MCR 5200 0
                    MARP
        CPND
          CPND LANG ROMAN
            NAME IP1140
            XPLN 10
           DISPLAY_FMT FIRST, LAST
     01 MCR 5200 0
        CPND
         CPND LANG ROMAN
            NAME IP1140
            XPLN 10
            DISPLAY_FMT FIRST, LAST
     02
     03 BSY
     04 DSP
     05
     06
     07
     08
     09
     10
     11
    12
     13
     14
     15
     16
     17 TRN
    18 AO6
    19 CFW 16
    20 RGA
     21 PRK
     22 RNP
     23
     24 PRS
     25 CHG
     26 CPN
```

Overlay 20 - Digital Set configuration TYPE: 3904 DES 3904 TN 000 0 09 08 VIRTUAL TYPE 3904 CDEN 8D CTYP XDLC CUST 0 MRT ERL 0 FDN 0 TGAR 0 LDN NO NCOS 0 SGRP 0 RNPG 1 SCI 0 SSU LNRS 16 XLST SCPW SFLT NO CAC MFC 0 CLS UNR FBD WTA LPR PUA MTD FND HTD TDD HFA GRLD CRPA STSD MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1 POD SLKD CCSD SWD LNA CNDA CFTD SFD MRD DDV CNID CDCA MSID DAPA BFED RCBD ICDA CDMA LLCN MCTD CLBD AUTU GPUD DPUD DNDA CFXA ARHD FITD CNTD CLTD ASCD CPFA CPTA ABDA CFHD FICD NAID BUZZ AGRD MOAD UDI RCC HBTD AHA IPND DDGA NAMA MIND PRSD NRWD NRCD NROD DRDD EXRO USMD USRD ULAD CCBD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNO3 MCBN FDSD NOVD CDMR PRED RECA MCDD T87D SBMD PKCH CROD CROD CPND LANG ENG RCO 0 HUNT PLEV 02 PUID DANI NO SPID NONE AST IAPG 1 AACS ACQ ASID SFNB SFRB USFB CALB FCTB ITNA NO DGRP PRI 01 MLWU LANG 0 ---continued on next page----

Digital telephones are configured using the **overlay 20**; the following is a sample 3904 digital set configuration. Again, a unique number is entered for the **KEY 00** and **KEY 01** value.

```
---continued from previous page----
MLNG ENG
DNDR 0
KEY 00 MCR 5201 0
                    MARP
       CPND
         CPND LANG ROMAN
           NAME Digital Set
           XPLN 10
           DISPLAY_FMT FIRST, LAST
     01 MCR 5201 0
       CPND
         CPND LANG ROMAN
           NAME Digital Set
           XPLN 10
           DISPLAY FMT FIRST, LAST
     02 DSP
     03 MSB
     04
     05
     06
     07
     08
     09
     10
     11
     12
     13
     14
     15
     16
     17 TRN
    18 AO6
    19 CFW 16
    20 RGA
    21 PRK
    22 RNP
    23
     24 PRS
     25 CHG
     26 CPN
     27 CLT
     28 RLT
     29
     30
     31
```

Analog telephones are also configured using **overlay 20**; the following example shows an analog port configured for Plain Ordinary Telephone Service (POTS) and also configured to allow T.38 Fax transmission. A unique value is entered for **DN**, this is the extension number. **DTN** is required if the telephone uses DTMF dialing.

Quarter 20 Angles Telephone Configuration
DES 500 TN 100 0 00 03 TYPE 500 CDEN 4D CUST 0 MRT
ERL 00000 WRLS NO DN 5202 AST NO IAPG 0 HUNT - TGAR 0 LDN NO NOS 0 SGRP 0 RNFG 0
XLST SCI 0
SCPW
SFLT NO
CAC_MFC 0
CLS UNR DTN FBD XFD WTA THFD FND HTD ONS LPR XRD AGRD CWD SWD MWD RMMD SMWD LPD XHD SLKD CCSD LND TVD CFTD SFD MRD C6D CNID CLBD AUTU ICDD CDMD LLCN EHTD MCTD GPUD DPUD CFXD ARHD OVDD AGTD CLTD LDTD ASCD SDND MBXD CPFA CPTA UDI RCC HBTD IRGD DDGA NAMA MIND NRWD NRCD NROD SPKD CRD PRSD MCRD EXR0 SHL SMSD ABDD CFHD DNDY DNO3 CWND USRD USRD CCBD BNRD OCBD RTDD RBDD RBHD FAXA CNUD CNAD PGND FTTC FDSD NOVD CDMR PRED MCDD T87D SBMD PKCH MPTD
PLEV 02
PUID
FTR DCFW 4

Attendant Consoles (Avaya 2250) are configured using **overlays 12** and **15**; the following example shows the 2250 configuration used. In overlay 15 (see following table), the Call Waiting queue Update feature (CWUP) must be set to YES. CWCL (Call Waiting Call Limit) is set to appropriate values, as is CWTM (Call Waiting Time). Finally, CWBZ (Call Waiting Buzz) is set to NO YES to provide two second buzz to alert operators to the arrival of a new call.

Overlay 15 – Attendant Data
ATT_DATA
OPT ABDD AHA EBIN BIXD BLA BOHD CHDA DNCA DRE
DNX DRE FACD IC1 ITG IDP XLF IBL
FKA MCTD NCD CUI MWUD LOD PSD RECA
REA EHS SLD SIAD THPD ATDA
ATDN 111
NCOS 0
CWUP YES
CWCL 3 4
CWTM 0 0
CWBZ NO YES
EFLL 0
MATT NO
RTIM 35 30 30
ATIM 0
AQTT 0
AODN
SPVC 00
SBLF NO
RTSA RSAX
SACP SNGL
ABDN NO
IRFR NO
XRFK NO
ADHT U
AFNT U
ICI 05 MTR
ICI 06 RLL
ICI 07 IAT
ICI 08 INT CFB
ICI 09 CFN MWC
RICI

	Overlay 12 – Attendant Console Configuration
TYPE: 2250TN 00 TYPE 2250 CDEN 8D CUST 0 SGRP 0 SETN 004 0 00 14 ANUM 01 IADN ALPD NO SSU ICDR ICDD ABAN ABDD CPND CNDA	04 0 00 13
EBLF BLFA	10 NUU
AADN DNDI DNDA DAPC DAPA LANG 03 KEY 00 BKI KEY 01 BIN KEY 02 DPS KEY 03 DPD KEY 04 SSC 0010 KEY 05 RFW KEY 06 MTR KEY 06 MTR KEY 07 PRK KEY 08 MCK KEY 09 MIK KEY 10 KEY 11 KEY 12 KEY 13 KEY 14 KEY 15 KEY 16 KEY 17	

In overlay 12, QTHM (Queue Thermometer) value is set to YES when entering 2250 configuration data, the NUL parameter setting means no ICI key assignments are entered.

6.8. Configure Call Detail Recording Serial Port

A serial port (TTY) must be configured on the Communication Server 1000E which Atiras can use to retrieve Call Detail Recording data. Use **overlay 17** to configure a new TTY port as in the following example. **User** must be **CTY**.

		Overlay 17 - CDR TTY Configuration
ADAN	TTY 6	
CTYP	MGC	
IPMG	4 0	
DNUM	6	
PORT	1	
DES	CDR_TTY	
BPS	9600	
BITL	8	
STOP	1	
PARY	NONE	
FLOW	NO	
USER	СТҮ	
TTYL	DG	0
BANR	YES	

This completes the configuration required for the Communication Server 1000E. Repeat the procedures in **Section 6.2** through **Section 6.8** for subsequent Communication Server 1000E systems.

7. Configure Atiras System Management Platform

Atiras R7.0 is a client/server system management solution; the client user graphical interface is similar to the desktop environment used in many Operating Systems. Managed systems and elements are presented as objects that may be dragged and dropped to effect changes. The server software must be installed on a Windows server (2003, 2008, XP Professional and Vista are supported). The client only supports Windows Operating Systems, but a lightweight web based version is available. Please refer to the Atiras installation guide for further details, see item [7] in **Section 10** of this document. For the purposes of these Application Notes, it is assumed Atiras R7.0 has been installed on a server connected to the Communication Server 1000E T-LAN and the client software has been installed on a Laptop which has the ability to connect remotely to the Communication Server 1000E T-LAN. This section describes the steps necessary to configure Atiras R7.0 to operate with Communication Server 1000E. The following procedures are discussed:

- Atiras design philosophy and data structure organization
- Configure the Communication Server 1000E elements as managed objects.
- Configure the Atiras Attendant Console
- Configure the Lantronix terminal server
- Configure the Communication Server 1000E NRS

7.1. Atiras design philosophy and data structure organization

Launch the Atiras 7.0 client by double clicking on the desktop shortcut or by selecting the application from Start \rightarrow Programs \rightarrow Atiras \rightarrow Atiras Desktop. Login with a valid user id and password (not shown). The following screenshot shows the Atiras client desktop.

The area on the left (highlighted) contains management and configuration wizards which can be used to generate reports, manage background jobs, monitor system alarms and events and access to system elements using terminal emulators. The main desktop area contains icons which represent Atiras objects. There are four object classes; System Objects (green), System Applications (blue), Folders (red) and User Folders (yellow). Examples of System Objects are telephones, users and Communication Server 1000E systems. Examples of System applications are alarm displays, call detail records and traffic data. Folders are used to group system applications and system objects into a common group or a hierarchical display. User folders contain private user data. Objects can be dragged and dropped into folders or placed on the desktop as shortcuts. The primary focus of these application notes is with System applications and objects as related to Communication Server 1000E configuration and operation.

🗿 Atiras Desktop - frox									
File Edit View Options	Help								
Programs									Desktop
	Private directory	Logbook	Folder structure	System pplications			cores2.galc	5.5	
				PBX_1	PBX_2		PBX_3		
Programs						PBX PBX Programming	DSC Jobs		
Image: Second						Synchroniza	FM	en e	ам Ам

7.2. Configure Lantronix Terminal Server

Atiras uses a serial RS232 connection to retrieve Communication Server 1000E Call Detail Records and traffic data. In situations where Atiras is managing remotely located Communication Server 1000E's, a terminal server is connected at the remote Communication Server 1000E and Atiras connects to the terminal server to access the remote system. The Lantronix terminal server must be configured before Atiras attempts to use it; the following procedure shows the necessary steps. Connect a serial cable to one of the Lantronix serial ports and connect a terminal or a PC running a terminal emulator with the com port settings 9600 baud, 8 bits, no parity, 1 stop bit and no flow control.

- Power off the Lantronix terminal server.
- While holding down the **TEST** button, power on the Lantronix terminal server
- Wait 20 seconds (still holding the TEST button)
- Release the **TEST** button, the Lantronix resets
- Hold down the terminal or terminal emulator ! key
- Type xyz within five seconds to gain access to the device command line

The Lantronix is now reset to factory defaults and powers up in auto configuration mode. Configure the device with the following settings:

- **IP Address**, the address to be used for the Lantronix (e.g. 47.166.92.189)
- Network Mask, corresponding subnet mask (e.g. 255.255.255.224)
- **Default Gateway**, gateway ip address (e.g. 47.166.92.222)
- Hostname, a name that the Lantronix will be known as (e.g. lantronix)
- Access Port, the port number that will be used to access the Lantronix (e.g. 2001)

Remove the terminal or terminal emulator and connect the serial cable to the Communication Server 1000E TTY port configured in **Section 6.8**. Next, configure Atiras to use the Lantronix to connect to the Communication Server 1000E. Double click on the **System Objects** folder, this displays the contents as a list of objects; see the next screenshot for details. Double click on the **Terminal Server folder**.

Name	Туре	Modified on
🕼 User groups	User groups	09.12.1999 07:06:56
💋 People	People	09.12.1999 07:07:00
🕼 Accessories	Accessories	09.12.1999 07:07:00
💋 Accounts	Accounts	31.01.2003 10:16:24
💋 Sites	Sites	20.07.2010 17:13:22
💋 PBX	PBX	09.12.1999 07:07:00
💋 Directories	Directories	09.12.1999 07:06:56
💋 Interface boxes	Interface boxes	09.12.1999 07:07:00
💋 Modems	Modems	09.12.1999 07:07:00
🕼 Terminal server	Terminal server	09.12.1999 07:07:00
🕼 Server	Server	09.12.1999 07:07:00
💋 Remote devices	Remote devices	09.12.1999 07:07:00
💋 Templates	Templates	09.12.1999 07:07:00

A new Terminal Server object window opens (not shown), click on the **File** menu entry, then **New**. A new TCP/IP terminal server property window opens (see the following screenshot). The following configuration sets up Atiras to use the Lantronix terminal server to access the Communication Server 1000E serial port previously configured in **Section 6.8**:

- Name can be any descriptive test
- For Server, select the Atiras Server from the list
- IP address should be the Lantronix IP address, as configured previously
- Number of ports should be set to 1
- TCP/IP ports should be set to 2001

<u>N</u> ame:	Lantronix			
Server:	Atiras Server			
P address:	47.166.92.189	_		
Number of ports:	1			
TCP/IP ports:	2001	<not connected=""></not>	<u> </u>	
6			-	

7.3. Configure Avaya Communication Server 1000E elements

Double clicking on the **System Objects** folder displays the contents as an object list; see the previous **System Objects** screenshot for details. Double click on the **PBX folder**; this opens the PBX objects explorer. The following screenshot shows some example PBX objects.

🥩 РВХ			
File Edit View He	lp		
: 👆 🗈 💼 🖊 🗵	🎭 🌮 🏭 🎯 🛛		
Name	Туре	Modified on	AL.
5.5	Avaya CS1000	16.12.2010 11:27:30	
🥃 cores1.galctlab.com	Avaya CS1000	28.10.2010 09:19:28	
🥃 cores2.galctlab.com	Avaya CS1000	20.12.2010 09:03:48	

To configure a new **PBX object**, click on the **File** menu and select **New** (not shown), a PBX object property sheet opens with six tabs. The first tab contains the Communication Server 1000E system properties. For a new PBX object:

- Category is Avaya CS1000
- Name is a descriptive label for the PBX object
- System ID is the Communications Server 1000E Tape ID (TID)
- IP address or host is the call server IP address or FQDN
- TTY01 (Rlogin, CM), select ELAN PTY00 from the list
- TTY05 (FM, TM), select Lantronix for Busy:2001 from the list

Category Avaya CS1000 Name: Gorce22 gold(lab.com) System ID: 45379-1 IPaddress or host: 172.18.20.12 MIB description file (separate files with ;): MIB description management Serve: Serve: Serve: TTY01 (Blogin,CM) ELAN PTY00 TTY05 (FM,TM) Lantronix for Busy.2001 Lantronix for Busy.2001 Overlays User name/Password	operties Other Settings Configuration	Site References Information
Name: System ID: 46379-1 IPaddress or host: 172:18:20.12 MIB description management Server: Server: TTYO1 (Rlogin,CM) ELAN PTYO0 Serial interface: TTYO1 (Rlogin,CM) ELAN PTYO0 Overlays User name/Password	Category	Aveya CS1000
System ID: 46379-1 Paddress or host: 172.18.20.12 MIB description management Server: Server: Servit ITYO1 (Riogin,CM) ELAN PTYO0 (free> (free> (free> (free> User name/Password	Name:	cores2.galctlab.com
Paddees or host: 172.18.20.12 MIB description file (separate files with :): MIB description management Server: Serial interfaces TTY01 (Filogin.CM) ELAN PTY00 TTY05 (FM.TM Lantronix for Busy.2001 (free> (free> (free> (free> (free> User name/Password	System ID:	46379-1
MIB description management Server: Serial interfaces (free> (free> (free> (free> (free>))) User name/Password	Paddress or host:	172.18.20.12
MIB description management Server: Serial interfaces TTY01 (Rlogin,CM) ELAN PTY00 TTY05 (FM,TM) Lantronix for Busy:2001 Critee> Critee> Overlays User name/Password	MIB description file (separate files with ;):	
Server: Serial interfaces TYO1 (Rlogin,CM) ELAN PTYO0 TYO5 (FM,TM) Lantronix for Busy:2001 (free> (free> (free> (free>) (free>) User name/Password		MIB description management
Serial interfaces TTY01 (Rlogin,CM) ELAN PTY00 (free> (free> (free> Coverlays User name/Password	Server	
TTY01 (Riogin.CM) ELAN PTY00 TTY05 (FM.TM) Lantronix for Busy:2001 ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: :::: :::: ::::: ::::::::::::::::::::::::::::::::::::	Serial interfaces	
TTYO5 (FM,TM) Lantronix for Busy: 2001 (free> (free> (free> (free> User name/Password	TTY01 (Rlogin,CM)	ELAN PTY00
<pre> (free> (free> (free> (free>) (free>) (free>) (free>) (Jverlays User name/Password </pre>		Lantronix for Busy:2001
<pre> (riree> (riree> (riree> (riree>) User name/Password </pre>	<pre> <free></free></pre>	
Cree> Coverlays User name/Password	<pre> </pre>	
C (tree> User name/Password	<pre> </pre>	
Overlays User name/Password	L <free></free>	
User name/Password		Overlavs
User name/Password		
		User name/Password

Click on the **Apply** button (highlighted) and then on the **Other Settings** tab. This allows the new PBX object to be added to an existing network of PBX objects if required. This step is important for correct user management and facilitates drag and drop management of telephones between grouped Communication Server 1000E systems. In the following screenshot, click on the **Insert** button and then on the **Apply** button to add the new PBX object into the existing group. When finished, click on the **Configuration** tab.

	onriguration Site	Hererences	Information					
Prefixes								
or other PBXs in the netw	ork:							
	PBX	<			Prefix			
PBX_1				-	int.	-		
PBX_2				2	int.			
PBX_3				22	INC.			
cores1 delctieb.com				22	int.			
sores rigatetias.com								
lundle								
3undle	Туре	Target		Carrier	pr DC	baDC		
3undle	Туре	Target		Carrier	prDC	ba DC	1	

The Configuration tab sets up Communication Server 1000E access for Atiras. If the system PDT password has been changed, click on the **Change PDT Password** button and set it to the new value. Click on the **Password** button to set the level 2 password which Atiras uses to automatically logon to the Communication Server 1000E overlays. For **CDR Protocol**, select **M1_Release_22** from the list. The **FTP user name/password** button sets up Atiras to retrieve files from the Communication Server 1000E call server, click on the button and enter a valid user name and password combination with sufficient rights to retrieve system files. **VM Protocol** is set to **CS_1000_55**. Click on the **Apply** button when finished.

perties Other Settings 🖾 Configuration Site References Information	
Configuration Management Type: M1 / Avaya CS1000 Software release:	Change PDT password Password 2
User group: 0	
Default caller id display programming for new sets:	 Do not program Manually input name Generated name
Automatic caller id display programming valid from:	31.12.2035 23:59:59
Authorize accounts Range(s): Create backup Ranges (Example):	3100-3199,4001
Program pager Receive Param	
Account Performance Management	
CDR protocol:	MI_Helease_22
DN classification - private/business access code (example: 9>P;U>B;>B);	->B FTP user name/password
VM protocol:	CS_1000_55
Directory Management	
Bemote diversion: sequence "Divert set":	
Remote diversion: sequence "Cancel diversion":	
Evamples: 9999P1234P*231111[Source	SetIDeviSetI 9999P1234P#231111[SourceSet]
	Ok Cancel Apply He

7.4. Configure the Atiras Attendant Console

Atiras 7.0 contains an attendant answering position which remotely controls an Avaya 2250 Attendant Console. The Atiras attendant console must be configured correctly to communicate with the Avaya 2250 Attendant Console, the following screenshots show the configuration steps. It is assumed the Avaya 2250 Attendant console is configured as in **Section 6.7** and is operational and in the idle state. Click on the **Programs** entry in the left hand side menu of the Atiras desktop (see screenshot in **Section 7.1**).In the resulting list (not shown), click on the **Display of Subscriber Data** icon. The following screenshot shows the subscriber data window. The Atiras attendant console is located in the bottom left side of the window (highlighted).

atiras subscriber data display /	Internal phone boo	ok (write)											
File Edit Options Telephony Attend	tant View Help												
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$		i i i i i i i i i i i i i i i i i i i	I 🗈 🛛 🐂	2	8 🚨 🕅		٠ ه	P &	Θ 💥)	€×× ⊫			
🖃 🍪 Display of subscriber data	Field		Search criter	rion	^	Detail	Note	Keywords	Absences	Cost overview			
🖃 🍪 Internal telephone directories	Name				1								
- A Internal phone book (write	First name												
External telephone directories	Catchword						.////	///////					
External phone book (write	End of validity from						.////						
Private directories	End of validity until						/////	//////					
Logbook (write)	Phone						11111						
->>> Private directory (write)	Fax						/////						
	Mobile				~		/////						
	Тур	Name		First name	Abs								
					1.2.5		1111						
							11111						
							/////	///////					
								///////					
								///////					
								///////					
								111111					
							.////	///////					
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<u> </u>	<u> </u>				2		())))						
Statue: interrupted	(//////					
Status. Interrupteu		zueue.					/////						
	-	Ų	2 4	ь	8 1		Name		First name	Telephone	External telephone	Free/busy	absent
Status	L	Jispiay		IName							I second and a second sec		1
Source													
Destination						-							
			-										
	Source			Destination									
Time Status	Number Di	ialed Name	Status	Number	Name								
						-							
						1							
Beadu													NUM

Click on the Attendant entry in the upper menu bar, the following configuration window opens.

- For the **Telephone Type**, select **Avaya CS1000 attendant set M2250** from the drop down list.
- In the **Environment** section, configure the access codes for internal and external dialing, ensure these match the values used on the Communication Server 1000E.
- In the **Connection Settings** area, choose a free serial communications port (com port) on the Atiras server, the rest of the settings can remain at default.

Click on the **Apply** button when completed. Finally, ensure a suitable serial control cable (RS232) is connected between the Atiras server and the Avaya 2250 Attendant Console.

Environmer	at	Connection settings		
Access co	de for public	Com port	Com4	~
Own prefix		Baud rate	9600	\sim
Initial digits	s of telephone numbers	Parity	none	~
internal	1,2,3,4,5,6,7,8,9,*,#	Data bits	8	~
external	0	Stop bits	1	~
			Optior	31

7.5. Configure the Avaya Communication Server 1000E NRS

Atiras communicates directly with the NRS using Web Services. This requires the NRS configuration data be entered into the Atiras NRS **Job Management** property page. On the main Atiras desktop, click on the **Management** entry on the left hand side menu (see following screenshot), then on the **Job Management** entry.



A new **Job Management** window opens with a list of all Atiras background tasks. Use the **Type** drop down list to select **NRS programming** and the listings will reduce to just the NRS jobs (see next screenshot). Double click on the **cores2.galctlab.com** object.

🔲 Job management										
File Edit View F	lelp									
1 🕼 🔒 🕼 🖓 🖗	🛞 🔬 🧟									
Group:	Туре:	NRS programming)		~	Status:	~	Type:		~
Error:	~	User:			~	History:	~		Show all	
Assoc.Object	Status	Successful	Warnings	Error	Progress	Last activity	Last succes	sful Item	Owner	Workstation
cores2.galctlab.com	Ready	54	0	43	0 from 1	20.12.2010 09:15:32			frox [N	

The **Job Management – NRS programming** windows opens to allow inputting of NRS configuration details.

- For NRS name: use the same data as input in Section 5.1 (NRSM_on_cores2)
- **IP address:** can be the FQDN of the NRS (**cores2.galctlab.com**)
- User name: must be a valid UCM user with sufficient authorization to access the NRS
- **Password:** is the credential associated with the applied User name
- Service domain: is the same as entered in Section 5.2
- L1 domain: is the same as entered in Section 5.2
- L0 domain: is the same as entered in Section 5.2

When finished, click on the **OK** button.

NRS name:	NRSM_on_cores2		
P address:	cores2.galctlab.com	NRS-Version:	Linux / Avaya CS1000 V6.0 🔍
User name:	gerry	Password:	•••••
ervice domain:	dpp.nortel	DN-Type:	CDP steering code type (PRIVA 🐱
.1 Domain:	udp	HLOC:	
.0 Domain:	cdp		
NRS database			
Database status:	inactive		
last activation:	13.09.2010 13:28:51		
Activation messages:	cutover failed. An internal error	occurred while processing your	request. See log file on server for details. 📥

This completes Atiras R7.0 setup.

8. Verification Steps

To confirm successful Atiras configuration with the Communication Server 1000E perform the following two actions:

Right click on a PBX object on the Atiras desktop and then select Telephony functions
 → Synchronize... (see the following screenshot). Ensure the data is collected



• Click on the **Programs** entry in the left hand side menu of the Atiras desktop (see screenshot in **Section 7.1**). In the resulting list (not shown), click on the **Display of Subscriber Data** icon. The Atiras attendant will start. Place a call to the 2250 attendant console, the Atiras attendant status display should change from idle to busy.

9. Conclusion

Atiras is a comprehensive telemanagement system that automates Avaya Communication Server 1000E day to day operational tasks and provides excellent data and report generation facilities. Intended for larger corporations or customers with significant installations, Atiras R7.0 simplifies the running of complex networks of Avaya Communication Server 1000E systems by providing a visual interface that emulates the simplicity of a Windows desktop. Operations such as adding a phone, moving a user from one location to another are handled by background tasks which eliminate the need to manually delete and input data or use complex scripting.

10. Additional References

The following documents and external references may be helpful in understanding operation of particular Communication Server 1000E features and may provide more detailed information:

- 1 Information on how to install and configure Linux and Telephony applications:- Avaya Communication Server 1000E – Documentation Library – Document NN43001-315 (*Linux Platform Base and Applications Installation and Commissioning*)
- 2 Installation procedures and guidelines for CS1000E system installers:- Avaya Communication Server 1000E – Documentation Library – Document NN43041-310 (Communication Server 1000E Installation and Commissioning).
- 3 System Management platform (UCM) provides security, software deployment and other services to CS1000E elements:- Avaya Communication Server 1000E Documentation Library Document NN43001-116 (Unified Communications Management Common Services Fundamentals).
- 4 For information on configuring and operating SIP Line services on the CS1000E, see the following document:- Avaya Communication Server 1000E Documentation Library Document NN43001-508 (*Configuration SIP Line Fundamentals*).
- 5 A complete and detailed account of all CS1000E telephony features and services can be found in the following document :- Avaya Communication Server 1000E Documentation Library Document NN43001-106-B1 through NN43001-106-B6 (*Communication Server 1000 Features and Services Fundamentals Book 1 through Book 6*).
- 6 Atiras User Manual, 0201-1001-EN issue 6.1 11/2008. A guide for Atiras users and system administrators.
- 7 Atiras Technical Reference Manual, 0201-1003-E issue 6.1 11/2008. Technical manual for advanced Atiras users and system installers.

Linux Base software and installed Applications

Product Release: 6.00.18.00 Base Applications 6.00.18 base NTAFS 6.00.18 6.00.18 sm Jboss-Quantum 6.00.18 lhmonitor 6.00.18 6.00.18 kcv dfoTools 6.00.18 6.00.18 cppmUtil oam-logging 6.00.18 dmWeb 6.00.18.62 baseWeb 6.00.18 ipsec 6.00.18 Snmp-Daemon-TrapLib 6.00.18 tap 6.00.18 tap EmCentralLogic 6.00.18 Application configuration: CS+SS+NRS+EM Packages: CS+SS+NRS+EM Configuration version: 6.00.18 6.00.R CS dbcom 6.00.18.65 cslogin 6.00.18 sigServerShare 6.00.18.62 csv 6.00.18.65 tps 6.00.18.65 vtrk 6.00.18.65 pd 6.00.18.62 sps 6.00.18.63 6.00.18 ncs 6.00.18.65 gk nrsm 6.00.18 nrsmWebService 6.00.18 managedElementWebService 6.00.18 emWeb 6-0 6.00.18 csmWeb 6.00.18 bcc 6-0 6.00.18 ftrpkg 6.00.18 cs1000WebService 6-0 6.00.18

Installed Linux Base and Application Patches and Service Updates

```
Product Release: 6.00.18.00
In system patches: 4
               RPM
PATCH# NAME
       p29703 1 nortel-cs1000-shared-ssSubagent-6.00.18-00.i386
2
3
       p29407 1 nortel-cs1000-cs-6.00.R.100-00.i386
15
       p28774 1 nortel-cs1000-Jboss-Quantum-6.00.18.00-00.i386
16
       p28797 1 nortel-cs1000-Jboss-Quantum-6.00.18.00-00.i386
In System service updates: 21
PATCH# NAME
       ntp-4.2.4p8-1.el5.pp.i386.000
0
1
       nortel-cs1000-csv-6.00.18.65-04.i386.000
4
       nortel-cs1000-linuxbase-6.00.18.65-03.i386.001
5
       nortel-cs1000-patchWeb-6.00.18.65-01.i386.001
7
       nortel-cs1000-bcc 6-0-6.00.18.65-02.i386.000
9
       nortel-cs1000-cs1000WebService 6-0-6.00.18.65-02.i386.
10
       nortel-cs1000-ftrpkg-6.00.18.65-02.i386.000
12
       nortel-cs1000-sps-6.00.18.63-00.i386.000
13
       nortel-cs1000-gk-6.00.18.65-01.i386.000
       nortel-cs1000-tps-6.00.18.65-19.i386.000
14
17
       nortel-cs1000-vtrk-6.00.18.65-76.i386.000
22
       nortel-cs1000-shared-general-6.00.18.62-00.i386.000
23
       nortel-cs1000-shared-pbx-6.00.18.62-00.i386.000
       nortel-cs1000-emWeb 6-0-06.00.18.63-01.i386.001
24
25
       nortel-cs1000-pd-6.00.18.62-00.i386.000
26
       nortel-cs1000-nrsm-6.00.18.62-00.i386.000
2.8
       nortel-cs1000-dmWeb-6.00.18.62-00.i386.001
30
       nortel-cs1000-csmWeb-6.00.18.62-00.i386.001
31
       nortel-cs1000-auth-6.00.18.62-00.i386.000
32
       nortel-cs1000-ISECSH-6.00.18.62-00.i386.000
34
       nortel-cs1000-dbcom-6.00.18.65-01.i386.001
```

The following SP is in service: Service Pack Linux 6.00 18 20110104.ntl

Installed call server dependency lists

DepList 1: core Issue: 02 (created: 2011-01-10 09:38:29 (est)) IN-SERVICE PEPS PAT# CR # PATCH REF # NAME DATE FILENAME SPECINS 000 Q02033000 ISS1:1of1 p28736_1 04/02/2011 p28736_1.cpl 001 Q02071451 ISS1:1oF1 p29164_1 04/02/2011 p29464_1.cpl 002 Q02129706 ISS1:1OF1 p29352_1 04/02/2011 p29467_1.cpl 003 wi00826342 ISS2:1OF1 p29352_1 04/02/2011 p29457_1.cpl 004 Q02093188 ISS1:1OF1 p29154_1 04/02/2011 p29463_1.cpl 005 Q02097405 ISS1:1OF1 p29154_1 04/02/2011 p2946_1.cpl 006 Q01987279-02 ISS1:1OF1 p29154_1 04/02/2011 p2946_1.cpl 007 Q02076740 ISS1:1OF1 p29154_1 04/02/2011 p2946_1.cpl 008 Q0202909 ISS1:1OF1 p28469_1 04/02/2011 p28469_1.cpl 009 Q02024455-01 ISS1:1OF1 p28469_1 04/02/2011 p28469_1.cpl 010 Q01983521-04 ISS1:1OF1 p28161_1 04/02/2011 p28171_1.cpl 011 Q02035822-01 ISS1:1OF1 p28161_1 04/02/2011 p28171_1.cpl 012 Q01986974-05 ISS1:1OF1 p28181_1 04/02/2011 p28121_1.cpl 013 Q020497631 ISS1:1OF1 p28821_1 04/02/2011 p2821_1.cpl 014 Q0207631 ISS1:1OF1 p28819_1 04/02/2011 p28328_1.cpl 015 Q02064793-06 ISS1:1OF1 p28211_1 04/02/2011 p28328_1.cpl 016 Q01976701-01 ISS1:1OF1 p28211_1 04/02/2011 p28328_1.cpl 017 Q020232 ISS1:1OF1 p28469_1 04/02/2011 p28323_1.cpl 018 Q02043398 ISS1:1OF1 p28461_1 04/02/2011 p2834_1.cpl 019 Q02033440 ISS1:1OF1 p2867_1 04/02/2011 p28457_1.cpl 020 Q0210965 ISS1:1OF1 p2867_1 04/02/2011 p28457_1.cpl 021 Q0204308 ISS1:1OF1 p2867_1 04/02/2011 p28457_1.cpl 022 Q0210545 ISS1:1OF1 p2867_1 04/02/2011 p2867_1.cpl 023 Q02035396 ISS1:1OF1 p28667_1 04/02/2011 p2867_1.cpl 024 Q0202734-02 ISS1:1OF1 p28657_1 04/02/2011 p2867_1.cpl 025 Q02077909 ISS1:1OF1 p28668_1 04/02/2011 p2867_1.cpl 026 Q0204308 ISS1:1OF1 p28668_1 04/02/2011 p2867_1.cpl 027 Q0204138_1 P2865_1 p2972_0 04/02/2011 p2867_1.cpl 028 Q02135191 ISS1:1OF1 p2867_1 04/02/2011 p2867_1.cpl 029 Q02135191 ISS1:1OF1 p2867_1 04/02/2011 p2867_1.cpl 029 Q02135191 ISS1:1OF1 p2867_1 04/02/2011 p2867_1.cpl 029 Q02135191 ISS1:1OF1 p2867_1 04/02/2011 p287_0_1.cpl 030 Q02041385-02 ISS1:1OF1 p2868_1 04/02/2011 p287_0_1.cpl 031 Q	VERSION 4121 RELEASE 6 ISSUE 00 P +					
IN-SERVICE PEPS PAT# CR # PATCH REF # NAME DATE FILENAME SPECINS 000 02033000 ISS1:1oF1 p28736_1 04/02/2011 p28736_1.cpl 001 002071451 ISS1:1oF1 p29164_1 04/02/2011 p29842_1.cpl 002 002129706 ISS1:1oF1 p29352_1 04/02/2011 p29352_1.cpl 004 002093188 ISS1:1OF1 p29352_1 04/02/2011 p29352_1.cpl 005 002097405 ISS1:1OF1 p29154_1 04/02/2011 p29154_1.cpl 007 02076740 ISS1:1OF1 p29154_1 04/02/2011 p28171cpl 008 020229209 ISS1:1OF1 p2816_1 04/02/2011 p2812_1.cpl 010 00198521-04 ISS1:1OF1 p2816_1 04/02/2011 p2812_1.cpl 011 0201986974-05 ISS1:1OF1 p2818_1 04/02/2011 p2828_1.cpl 012 001986974-05 ISS1:1OF1 p2828_1 04/02/2011 p28281cpl 013 02	DepL	ist 1: core Issue	e: 02 (created:	2011-01-10	09:38:29 (e	st))
PATH CR # PATCH REF # NAME DATE FILENAME SPECINS 000 Q2033000 ISS1:10F1 p28736_1 04/02/2011 p28736_1.cpl 001 Q02071451 ISS1:10F1 p2842_1 04/02/2011 p29842_1.cpl 003 w100826342 ISS1:10F1 p29352_1 04/02/2011 p29352_1.cpl 004 Q02097405 ISS1:10F1 p24463_1 04/02/2011 p28416_1.cpl 006 Q109770_0 ISS1:10F1 p28416_1 04/02/2011 p28416_1.cpl 007 Q02076740 ISS1:10F1 p2816_1 04/02/2011 p2816_1.cpl 008 Q02024455_01 ISS1:10F1 p28717_1 04/02/2011 p28217_1.cpl 011 Q01985974_05 ISS1:10F1 p2821_1 04/02/2011 p2882_1.cpl 012 Q1985974_05 ISS1:10F1 p2821_1 04/02/2011 p2821_1.cpl 013 Q02049121_01 ISS1:10F1 p2821_1 04/02/2011 p2882_1.cpl 014 Q02097631 ISS1:1	IN-SE	ERVICE PEPS				
SPECINS 000 Q02033000 ISS1:1oF1 p28736 1 04/02/2011 p28736 1.cpl 001 Q02013500 ISS1:1oF1 p2942 04/02/2011 p2942 1.cpl 002 Q02129706 ISS1:1oF1 p29352 04/02/2011 p29352 1.cpl 004 Q02093188 ISS1:1OF1 p24463 04/02/2011 p28463 1.cpl 005 Q02097405 ISS1:1OF1 p24463 04/02/2011 p28463 1.cpl 006 Q01987279-02 ISS1:1OF1 p28146 04/02/2011 p28154 1.cpl 007 Q02076740 ISS1:1OF1 p28171 04/02/2011 p28171 1.cpl 008 Q02029209 ISS1:1OF1 p28121 04/02/2011 p28212 1.cpl 010 Q01985321-04 ISS1:1OF1 p28212 04/02/2011 p28212 1.cpl 013 Q0204974-05 ISS1:1OF1 p28281 04/02/2011 p28212 1.cpl 014 Q02097631	PAT#	CR #	PATCH REF #	NAME	DATE	FILENAME
000 Q02033000 ISS1:10F1 p28736_1 04/02/2011 p28736_1.cp1 001 Q02071451 ISS1:10F1 p29164_1 04/02/2011 p29164_1.cp1 002 Q02129706 ISS1:10F1 p29352_1 04/02/2011 p2942_1.cp1 004 Q02093188 ISS1:10F1 p29464_1 04/02/2011 p2946_1.cp1 005 Q02097405 ISS1:10F1 p2846_1 04/02/2011 p2846_1.cp1 006 Q01987279-02 ISS1:10F1 p2846_1 04/02/2011 p2846_1.cp1 007 Q02076740 ISS1:10F1 p2817_1 04/02/2011 p2846_1.cp1 008 Q02024455-01 ISS1:10F1 p28717_1 04/02/2011 p2816_1.cp1 011 Q02035821-04 ISS1:10F1 p2881_1 04/02/2011 p2821_1.cp1 012 Q01986974-05 ISS1:10F1 p2881_1 04/02/2011 p2832_1.cp1 013 Q02044793-06 ISS1:10F1 p2841_1 04/02/2011 p2832_1.cp1 014 Q02097631 ISS1:10F1	SPECI	INS				
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041 002107402 ISS1:10f1 p29512 1 04/02/2011 p29512 1 cpl	041	002107402	ISS1:1of1	p29512 1	04/02/2011	p29512 1.cpl
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045	Q02079849	ISS1:10F1	p29238 1	04/02/2011	p29238 1.cpl
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050	QU2U58567-U1	1551:10F1	p28965_1	04/02/2011	p28965_1.cp1
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100	Q02090310	TCC1.10TT	p29423_1	04/02/2011	$p_{2} = p_{2} = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 =$
TUU	QUZUSU9//	TOPTSTAT	p∠obu/ I	U4/UZ/ZUII	PZODU/ I.CDT

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101	Q01999478-01	ISS1:10F1	p27897 1	04/02/2011	p27897 1.cpl
102	Q02108852	ISS1:10F1	p29825_1	04/02/2011	p29825 1.cpl
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104	Q02021384-01	ISS1:10F1	p28615_1	04/02/2011	p28615 1.cpl
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106	002137476	ISS1:10F1	p_{29962}^{-1}	04/02/2011	p29962 1.cpl
107	002094012	ISS1 · 10F1	$p29370_{1}$	04/02/2011	p29370 1 cpl
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114 115	QUZU/1/39	1551:10F1	p29096_1	04/02/2011	p29096_1.cp1
115	QU2U58669-UI	ISSI:IOFI	p30124_1	04/02/2011	p30124_1.cp1
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119	Q01982233-06	ISS1:10F1	p28172_1	04/02/2011	p28172_1.cpl
120	Q02057782-01	ISS1:10F1	p29215_1	04/02/2011	p29215_1.cpl
121	Q01974578-04	ISS1:10F1	p27329_1	04/02/2011	p27329_1.cpl
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124	Q02151971	ISS1:10F1	p30156_1	04/02/2011	p30156_1.cpl
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130	Q02158724	ISS1:10F1	p30210 ⁻ 1	04/02/2011	p30210_1.cpl
131	Q02103392-01	ISS1:10F1	p29480 ⁻ 1	04/02/2011	p29480_1.cpl
132	Q02061039-04	ISS1:10F1	p28927 ⁻ 1	04/02/2011	p28927_1.cpl
133	Q02039403-01	ISS1:10F1	p29378_1	04/02/2011	p29378 1.cpl
134	Q02108821-01	ISS1:10F1	p29529_1	04/02/2011	p29529 1.cpl
135	Q02109705-04	ISS1:10F1	p29701 1	04/02/2011	p29701 1.cpl
136	Q02131549	ISS1:10F1	p30065_1	04/02/2011	p30065 1.cpl
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140	wi00733835	ISS1:10F1	p30418_1	04/02/2011	p30418 1.cpl
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144	000350041 - 01	ISS1.10F1	$p25070_1$ $p16376_1$	04/02/2011	p16376 1 cpl
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147	Q02113402 Q02071694-04	1991.10F1	p_{302}_{-1}	04/02/2011	p30234_1.cp1
140	Q02071094-04	1331.10F1	$p_{2,907,9}$ _1	04/02/2011	p29079_1.cp1
140	Q01974303-02	1331.10F1	$p_2/3/0_1$	04/02/2011	p2/3/0_1.cp1
150	QUZIU4/40-UI	TOOL.IVEL	$P23430_1$	04/02/2011	p29495_1.Cp1
15U	QUZIZ4UZ3-U3	ISSI:IUFI	P23303_I	04/02/2011	p29903_1.Cp1
151	QUZIJ/000 000110441_01	1551:10F1	p30204_1	04/02/2011	p30204_1.cp1
152	QUZIIU441-UI	1551:10F1	p295//_1	U4/UZ/ZUII	p295//_1.cpl
153 154	QUZI44165	1551:10F1	p30036_1	04/02/2011	p30036_1.cpl
154	QU2112375-02	1SS1:10F1	p29671_1	04/02/2011	p296/1_1.cpl
155	QU2U19660-04	1SS2:10F1	p28252_2	04/02/2011	p28252_2.cpl
156	QU2108873-02	ISS1:10F1	p29590 l	04/02/2011	p29590 l.cpl

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wi00830941	ISS1:10F1	p30461 ⁻ 1	04/02/2011	p30461 1.cpl	
Q02120030	ISS1:10F1	p29713_1	04/02/2011	p29713 1.cpl	
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wi00730573	p29355	p30416 ⁻ 1	04/02/2011	p30416 ^{1.cpl}	
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wi00795545	ISS1:10F1	p30336_1	04/02/2011	p30336 1.cpl	
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Q02136557	ISS2:10F1	p29899_2	04/02/2011	p29899_2.cpl	
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wi00819538	p30085	p30527_1	04/02/2011	p30527_1.cpl	
MDP>LAST SUCCESSFUL MDP REFRESH :2011-01-10 17:38:55(Local Time)					
MDP>USING DEPLIST ZIP FILE DOWNLOADED :2011-01-10 09:38:29(est)					
	<pre>wi00734106 Q02170814 Q02157937 wi00830941 Q02120030 wi00732114 wi00730573 Q02155346-01 wi00833809 wi00795545 Q02168320 Q02122642 Q01994258-03 wi00835128 Q02079612-02 Q02157822-01 Q02116276-01 wi00826065 Q02155698 Q02167838 wi00821858 Q02136557 WI00824134 Q02062971 wi00834380 wi00819538 LAST SUCCESSFUL USING DEPLIST ZI</pre>	wi00734106ISS1:10F1Q02170814ISS1:10F1Q02157937ISS1:10F1wi00830941ISS1:10F1Q02120030ISS1:10F1wi00732114ISS1:10F1wi00730573p29355Q02155346-01ISS3:10F1wi00795545ISS1:10F1Q02122642ISS1:10F1Q02122642ISS1:10F1Q021994258-03ISS1:10F1Q02079612-02ISS1:10F1Q02157822-01ISS1:10F1Q0216276-01ISS1:10F1Q02155698ISS1:10F1Q02167838p29830wi00821858ISS1:10F1Q02136557ISS1:10F1Q02062971ISS1:10F1wi00834380ISS1:10F1wi00819538p30085LAST SUCCESSFUL MDP REFRESH :2USING DEPLIST ZIP FILE DOWNLOA	wi00734106ISS1:10F1p30421_1Q02170814ISS1:10F1p30345_1Q02157937ISS1:10F1p30218_1wi00830941ISS1:10F1p30461_1Q02120030ISS1:10F1p29713_1wi00732114ISS1:10F1p29713_1wi00730573p29355p30416_1Q02155346-01ISS3:10F1p30398_1wi00730573p29355p30416_1Q02155346-01ISS3:10F1p30374_1wi00730573p29355p30416_1Q02155346-01ISS3:10F1p3036_1Q02168320ISS1:10F1p30346_1Q02122642ISS1:10F1p29732_1Q01994258-03ISS1:10F1p3033_1wi00835128ISS1:10F1p3054_1Q02079612-02ISS1:10F1p30197_1Q02167822-01ISS1:10F1p30172_1Q021676605ISS1:10F1p30452_1Q02167838p29830p30324_1wi00821858ISS1:10F1p3043_1Q02166577ISS2:10F1p29899_2WI00824134ISS1:10F1p30456_1Q02062971ISS1:10F1p30548_1wi00819538p30085p30527_1LAST SUCCESSFUL MDP REFRESH :2011-01-10_17USING DEPLIST ZIP FILE DOWNLOADED :2011-01-01	wi00734106ISS1:10F1p30421_104/02/2011Q02170814ISS1:10F1p30345_104/02/2011Q02157937ISS1:10F1p30218_104/02/2011wi00830941ISS1:10F1p30461_104/02/2011Q02120030ISS1:10F1p29713_104/02/2011wi00732114ISS1:10F1p30398_104/02/2011wi00730573p29355p30416_104/02/2011Q02155346-01ISS3:10F1p30540_104/02/2011wi0083809ISS1:10F1p30336_104/02/2011Q02168320ISS1:10F1p30346_104/02/2011Q02122642ISS1:10F1p30333_104/02/2011Q021994258-03ISS1:10F1p30303_104/02/2011Q02157822-01ISS1:10F1p30197_104/02/2011Q02157822-01ISS1:10F1p30197_104/02/2011Q0216276-01ISS1:10F1p30172_104/02/2011Q02155698ISS1:10F1p30172_104/02/2011Q02136557ISS2:10F1p30243_104/02/2011Q02136557ISS2:10F1p2989_204/02/2011WI00824134ISS1:10F1p3054_104/02/2011Wi00834380ISS1:10F1p30548_104/02/2011wi00834380ISS1:10F1p30548_104/02/2011WI00834380ISS1:10F1p30548_104/02/2011WI00834380ISS1:10F1p30548_104/02/2011WI00834380ISS1:10F1p30548_104/02/2011WI00834380ISS1:10F1p30548_104/02/2011 </td	

Installed call server patches and plug-ins

14/02/11 13:58:36 TID: 46379 VERSION 4121 System type is - Communication Server 1000E/CPPM Linux CPPM - Pentium M 1.4 GHz IPMGs Registered: 1 IPMGs Unregistered: 0 IPMGs Configured/unregistered: 0 RELEASE 6 ISSUE 00 R + IDLE SET DISPLAY Rls6 CoRes2 DepList 1: core Issue: 02(created: 2011-01-10 09:38:29 (est)) MDP>LAST SUCCESSFUL MDP REFRESH :2011-01-10 17:38:55(Local Time) MDP>USING DEPLIST ZIP FILE DOWNLOADED :2011-01-10 09:38:29(est) SYSTEM HAS NO USER SELECTED PEPS IN-SERVICE LOADWARE VERSION: PSWV 100 INSTALLED LOADWARE PEPS : 0 ENABLED PLUGINS : 1 PLUGIN STATUS PRS/CR NUM MPLR NUM DESCRIPTION _____ 206 ENABLED Q00954846 MPLR19491 PI:Connected party number inserted at the tandem node

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